

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Test -1 EXAMINATION - 2016

B.Tech (CSE & IT) Vth Semester

COURSE NAME: COMMUNICATION SYSTEMS

MAX.MARKS:15

COURSE CODE: 10B11EC514

COURSE CREDITS: 04

MAX.TIME: 1 HRS

Note: All questions are compulsory. Carrying of mobile phones during examinations will be treated as a case of unfair means.

- Q1.** What do you mean by modulation? Discuss the need of modulation in communication systems. (1+2 =3)
- Q2.** Derive an expression for RC time constant in the demodulation of conventional AM (Amplitude modulation) using Envelope detector. (3)
- Q3.** A DSB-SC signal has to be demodulated using synchronous detector. The carrier signal generated at receiver is not fully synchronised with the carrier signal generated at transmitter. Derive an expression for the detection of DSB-SC signal for the given situation. Discuss the consequences in detail. (3)
- Q4.** How will you generate an SSB-SC signal using Phase Discrimination method. Discuss in detail the working of this method. (3)
- Q5.** An SSB transmission contains 10 kW. This transmission has to be replaced by standard amplitude modulated signal with the same power content. Determine the power content of the carrier and each of the sidebands when the percentage modulation is 80%. Also calculate the efficiency of the AM system. (1+1+1 =3)